



600 Settlers Landing Road • Hampton, Virginia 23669-4033 • (757) 727-0900 • www.vasc.org

Structures

Post-Visit Activities

Grades K-2

Developed 11/07



These activities are intended for use after your visit to the Virginia Air and Space Center. Your students should recall the information, demonstration, and activities from the Structures program in order to do these activities. All of the activities can be tailored to your specific classroom needs, and the procedures listed are suggestions for teaching.

Activity 1: Architecture-Ancient to Modern

This activity is one big research project. You will want to split your class into groups of 3-4 students. They will need to be able to access maps, resources in the library, and the internet if available.

Assign each group a different Architectural structure. Examples: Pyramids, Roman Coliseum, Great Wall of China, Eiffel Tower, the ancient aqueducts, etc. Have them research the geographical location, culture, language, climate, building structure, and the materials used to make it. Have them make map drawings of the geographical location. You will need to give them a set amount of time to work on the project, along with guidelines. Allow them to also ask their parents for help to do research at home on the computer too. Have them think about the climate and the building materials available to the architects. Once each group has assembled all of their information, have each group share their findings with the rest of the class.

Extension: You may also want to have your students put together posters for their project using pictures, clippings and drawings.

Activity 2: Making the Model

Materials: For this activity you will need an assortment of small building materials such as popsicle sticks, string, straws, tin foil, pipe cleaners, cardboard, etc. You will also need paper, glue, markers, scissors, and any other crafting materials you have available.

For this activity you will want to use the same groups from above to do this activity. Have each group build a miniature model of the structure they researched in the previous activity. Have each group construct a miniature version of the above selected structure using the materials you give them. Once each group has completed their structure, you can display them around the classroom for everyone to enjoy.

Extension: See if they can identify the different parts within the structure. What geometric shapes does it have? Are there girders and beams? What is the main structural support?

Activity 3: Do Materials Matter?

This activity is a group discussion with your class. Ask them if the materials used in structure are important. Yes. Why? Would an architect want to make a structure out of hay like the three little pigs? No, because it wouldn't stand up to a storm or strong winds. So what kinds of materials are good to use? Brick, cement, wood, metal, and glass are just some possibilities. Many of these are used in various combinations. Does combining the materials make things stronger? Why? Have the students discuss the pros and cons of the different materials. Does it clean easily? Once constructed, does it need paint? Why? It helps to seal out moisture. Can outside elements such as weather break down these materials? Yes, so what has to be done to secure the structure from moisture? Have them discuss all these elements. Then ask them to analyze the materials used to build the school. See how many different building materials they can identify.

Extension: Have your students analyze their miniature models they made. What materials might have made their project better if they had access to them? Why? What materials that they did use to make their model help make it structurally sound? Why?

RESOURCES

Websites

<http://www.archkitecture.org/>

<http://www.hsv.k12.al.us/schools/art/dixon/architecture.htm#Pyramids>

<http://www.kidsgeo.com/geography-games/>

This website has a variety of geography lessons that you can incorporate in your classroom: <http://www.enchantedlearning.com/geography/>

http://ology.amnh.org/einstein/stufftodo/threed_dimension.html

Books

Architecture Shapes. Micheal J. Crosbie, Steve Rosenthal. 1993.

Bridges: Amazing Structures to Design, Build, and Test. Carol A. Johmann, Elizabeth Rieth. 1999.

Building. Andrew Haslam. 1997.

Skyscrapers!: Super Structures to Design and Build. Carol A. Johmann. 2001.

Structures: Or Why Things Don't Fall Down. J. E. Gordon. 2003.

Why Buildings Stand Up: The Strength of Architecture. Mario G. Salvadori. 2002.

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